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INFLUENCE OF KNOWLEDGE MANAGEMENT INFRASTRUCTURE, KNOWLEDGE MANAGEMENT PROCESS CAPACITY, ORGANIZATIONAL LEARNING, AND INNOVATION MANAGEMENT ON ORGANIZATIONAL PERFORMANCE IN THAILAND METAL INDUSTRY

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Abstract

The metal industry plays a vital role in international business expansion, increased of national income, employment creation and social stability promotion as well as an environmental change in domestic and international business operation. Small and medium enterprises (SMEs) in countries with resource and competitiveness deficiencies will face more strict and severe challenges in their business operation. Consequently, how to promote SMEs to improve their capacity to achieve sustainable competitiveness becomes the most crucial issue of current organizations. This research aims to 1) examine the level of knowledge management infrastructure, knowledge management process capacity, organizational learning, innovation management and organizational performance in Thailand metal industry, 2) examine the influence of knowledge management infrastructure, knowledge management process capacity, organizational learning and innovation management towards organizational performance in Thailand metal industry, and 3) develop the model of organizational performance in Thailand metal industry. The mixed research methodology was applied in both the quantitative and qualitative ones. In view of the quantitative term, the sample group was the members of the Siam Metal Association consisting of distributors, manufacturers, importers and exporters of metal products and ferrous metal, a total of 440 persons who were collected by the stratified sampling based on 20-time criteria of the observed variables. Data collection was conducted through questionnaires whereas structural equation modelling was applied for data analysis. For the qualitative term, an in-depth interview was undertaken among the primary informants; 20 executives and managers of the captioned industry. The findings revealed that 1) knowledge management infrastructure, knowledge management process capacity, organizational learning, innovation management and organizational performance in Thailand's metal industry were all at a high level, 2) knowledge management infrastructure, knowledge management process capacity, organizational learning and innovation management influenced the organizational performance in Thailand's metal industry with a statistical significance level of .05, and 3) the organizational performance model of Thailand's metal industry as developed by this study was called the OKOKI model (O = Organizational Performance , K = Knowledge Management Infrastructure, O = Organizational Learning, K = Knowledge Management Process Capability, I =Innovation Management). Additionally, the qualitative findings also indicated that to gain better operating performance in Thailand's metal industry, entrepreneurs should place importance on innovation management and technology related to the metal industry system in order to enable employees to increasingly utilize their expertise for working effectively, decrease redundant tasks, mitigate operating risks, create competitive advantage and enhance more organizational competency. This research's findings can be also applied to exploring new opportunities, and developing new products, strategies and creativity for systematic organization development and sustainable competitive advantage.

Keywords: Knowledge Management Infrastructure/ Knowledge Management, Process Capacity/ Innovation Management / Organizational, Learning/ Organizational Performance.

INTRODUCTION

1. The relationship between knowledge management infrastructure and the other variables

Ruiz-Mercader, J. et al., (2006) reveal that obtaining sustainable competitive advantages depends on organizational learning capabilities, which are essential in information technology implementation in nonstructured contexts. The aim of their paper is to provide empirical evidence of the relationship between information technology and learning in small businesses as well as their impact on organizational performance. However, individual learning is found as a key factor for small businesses regardless the level of knowledge-intensity of the sector. Learning at this level has a positive and significant effect on organizational learning. Organizational learning can be boosted through investing in information technology as well as encouraging individual learning. However, organizational performance can be improved through individual learning and organizational learning but not through information technology.

So, information technology contributes to obtain better outcomes indirectly via organizational learning. Ruiz-Mercader, J. et al., (2006) results confirm that, as assert, to develop learning capacity within organizations a social-cultural climate for learning have to coexist with appropriate structures, systems and procedures.

A balance between systems and human-orientation is needed. So, information technology has bigger influence on outcomes in a proper context of learning. Real J.C. et al. (2006) highlight the fact that organizational learning plays an important role in mediating the impact of information technology on technological distinctive competencies. Information technology plays an active role in transforming tacit knowledge into explicit knowledge and in disseminating knowledge throughout the organization.

They can be involved in fundamental processes, including transforming resources into competencies and then into unique capabilities. The explanation for this result, as argued by Adams and Lamont (2003), is the relevance of IT in the development of learning capabilities that enable firms to identify, assimilate and apply external information to new processes or products, the so-called absorptive capacity (Cohen and Levinthal, 1990).

In the study by Singh and Kumar (2017) it is known that the dimensions of KM infrastructure can facilitate organizational learning to further improve product quality, enhance employee skills and competencies, maintain knowledge assets, and add value through effective use of knowledge. Specifically, collaboration, trust, learning culture, formalization, flexible centralization, IT support, and a deep understanding of human resources support knowledge processes. Therefore, these dimensions require a great deal of attention from practitioners.

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That is, organizations should strengthen the culture, structure, technology, people, and infrastructure to facilitate the creation, sharing, transfer, and application of knowledge in organizational learning thereby increasing the effectiveness of knowledge and improving organizational performance. Batayneh et al. (2016) study the impact of knowledge management infrastructure on organizational learning in Jordanian commercial banks (Northern Region).

Among the 84 valid questionnaires returned, a positive relationship was found between knowledge management infrastructure, culture, physical environment and organizational learning in the organizational structure. Batayneh, Mohammed Turki suggested that there is a need to encourage individuals engaged in this type of business to take initiatives and there is a need to adjust the organizational structure to accommodate organizational learning, identify organizational learning objectives and provide information technology infrastructure. Liao et al., (2012) investigates the relationships among organizational culture (OC), knowledge acquisition (KA), organizational learning (OL), and organizational innovation (OI) in Taiwan's banking and insurance industries.

H1: Knowledge management infrastructure influence organizational learning.

Song et al. (2001) find the results that IT (communication, decision making) has positive impact on knowledge management process and knowledge processes mediate the relationship between IT and performance. Allamech et al. (2011) study the relationship between enablers as independent variable and knowledge management as dependent variable. In this research, Lawson's model for measuring knowledge management processes, and Lee and Choi's model for measuring the enablers are used. The findings of this study show that enablers were significantly related to knowledge management processes.

Technology and culture variables significantly were related to knowledge management processes and structure variable was not significantly related to knowledge management processes. Among the three enablers, technology and culture have the most effect on the knowledge management processes respectively. The six minor hypothesis of this research which go about the relation between 6 processes and enabling factors were all approved at the safety level. These relations confirm the effect of enabling factors variable as the independent variable on knowledge management processes variable as the dependent variable and also considers it significant. In fact, improving enabling factors status in the organization can be followed by the knowledge management processes improvement. (Allamech et al., 2011)

H2: Knowledge management infrastructure influence knowledge management process.

Jinan Aref Hajiret et al. (2015) aimed to identify the role of KM infrastructure (organizational culture, organizational structure, human resource, information technology, and physical environment) in enhancing innovation at mobile telecommunication companies in Jordan. This also reflects the aggressive competition that exists in this sector in Jordan. In addition, the results indicated a positive effect of organizational culture, human resource, information technology and physical environment on innovation; whereas no statistically significant effect was found of organizational structure on innovation.

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The results of testing the five hypotheses confirmed the role of knowledge management infrastructure in enhancing innovation at mobile telecommunication companies in Jordan. Moreover, the results indicated that the variable that had the highest effect on innovation was information technology, followed by organizational culture, then human resource and the last one was physical environment. The value of β for organizational structure was negative, which reflects a negative association between innovation and organizational structure. The results of testing the five hypotheses confirmed the role of knowledge management infrastructure in enhancing innovation at mobile telecommunication companies in Jordan.

H3: Knowledge management infrastructure influence innovation management.

2. The relationship between organizational learning and the other variables

Chin-Yen Lin & Tsung-Hsien Kuo. (2007) proposed a positive relationship between OL and KMPC and a positive influence of KMPC and OL on OP. The OL perspective is a critical issue in KM and the interaction effects of human-oriented as well as system-oriented KM strategies and OL significantly impact KM capability.

Wahda Wahda (2016) show that the exact science, non- exact science, and exact-non exact, organizational learning culture have a significant positive effect to knowledge management. It means when an organizational learning culture is strongly implanted, then the knowledge management shall be well implemented. It means that, to carry out the knowledge management well, then, a suitable organizational culture is very required.

The research of Ju, Teresa L. et al. (2006) shows that the level of organizational learning can directly affect the knowledge management capability and can also indirectly affect the knowledge management capability through knowledge integration. The levels of organizational learning and knowledge integration also serve as mediating variables that affect knowledge management capabilities. In order to enhance product and process innovation, managers should strive to promote the knowledge integration, organizational learning and knowledge management capabilities of the enterprise.

H4: Organizational learning influence knowledge management process capacity.

Stella, (2012) findings revealed a significant positive relationship between organizational learning and firm performance which implied that when SMEs possess the learning ability would enhance their performance to creates new knowledge which can help firms respond quickly to customers' needs and industry changes. This also receives support from. Maktabi (2014) show that organizational learning positively affects organizational performance.

Since performance is a central concern to all firms, so organizations should encourage employees to share work experiences or learning reflections, and employees should actively explore the current market and related new product information and actively improve their professional competencies and should set work-related goals and try to accomplish them to enhance organizational performance directly and indirectly through organizational innovation because the creation of innovative culture through learning allows firm to achieve a better competitive position and above-average performance.

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Data from the study by Goh, S.C. et al. (2002) showed no relationship between learning capacity and financial performance in a sample of Canadian firms. However, learning capability was positively related to job satisfaction, a non-financial performance indicator. Although this study suggests that the relationship between learning competencies and ultimate financial performance or rewards is not as clear. But building or having this learning capability can have a positive impact on employee morality, such as job satisfaction.

Wahda Wahda's (2016) study aimed to determine the mediating effect of knowledge management on organizational learning culture in higher education organizations (PTNs) in South Sulawesi. The units of analysis for this study are the exact science research project, the non-exact science scholar, and the research object.

The results of the analysis show that organizational learning culture has the greatest impact on achieving organizational performance. At the same time, the indirect effects of these two variables on organizational performance through knowledge management, especially the effects of precise science research programs, imprecise science, and precise imprecise.

In accordance with the studies presented above, we propose the following hypothesis:

H5: Organizational learning influence organizational performance.

3. The relationship between Knowledge management process capability and the other variables

The findings of Qandah et al. (2020) suggest that knowledge combination capability is the only structure that significantly influences product/service innovation (b = 0.310, p # 0.01), which is supported by previous literature (Gold et al, 2001; Lee and Choi, 2003; Zheng et al., 2010) because innovation will not occur unless knowledge is integrated by removing redundant and outdated knowledge from external and internal environments and by coordinating external and internal networks to effectively combine knowledge.

An important result in this research that should be transformed into practice is that knowledge combination capabilities is vital for creating product and service innovation as managers should focus on investing in this type of capabilities as to ensure having new ideas that can be implemented into successful new products or services and easily adopted by customers. Managers should take into consideration and have prior knowledge where it is not enough to have innovative culture or having best structure and latest technology to create innovations without having the ability to combine internal and external knowledge and implement them into genuine new products or services. Hence, we hypothesize the following:

H6: Knowledge management process capability influence innovation management.

The findings of Lee and Lee (2007) suggest that the knowledge management process activation of generating, accessing, facilitating, representing, embedding, usage, transferring knowledge, and measuring knowledge assets form an operational perspective for the framework of knowledge combination and exchange that underlies the theory of knowledge integration is positively related to organizational performance (customer and financial perspectives).

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The results of the analysis by Zaied et al. (2012) & Zaied (2012) showed a strong positive relationship between knowledge management capacity and organizational performance. Therefore, the purpose of his work was to provide a conceptual framework to describe the KM dimensions and address their relationship with organizational performance (Zheng et al. 2010). These results indicate that knowledge management dimensions are well implemented in the IT sector, followed by the industrial and service sectors. The highest dimension affecting organizational performance in the service sector is human resources; while culture is the highest dimension in industry and IT with significance. Tseng et al. (2012) found that knowledge management capabilities have direct and indirect effects on enhancing organizational performance based on the results of path analysis. This suggests that when firms have better knowledge management capabilities, they are able to rapidly generate new production processes that result in new products and services to respond to changes in the external environment and enhance the market value and organizational performance of the firm.

Therefore, this study proposes the following hypothesis.

H7: Knowledge management process capability influence organizational performance.

4. The relationship between Innovation management and Organizational Performance

Resource Base View (RBV) theory demonstrates a prominent role of unique resources (tangible and intangible) in a sustainable competitive position (Barney, J. 1991). Y. Zhang et al. (2010) analyses of the empirical evidence collected from 304 CEOs and top managers.

The results indicate that MI and TI significantly positively contribute to sustainability and organization performance. This research confirms a significant positive influence of sustainability on financial performance—hereby supporting value creating theory.

Considering the substantial role in MI and TI, the research favors the RBV theory and recommends that firms should emphasize their internal capabilities (hereby deemed MI and TI) to gain superior performance and found that TI is more critical for firm sustainability and high performance as compared to MI in the emerging economy of Pakistan.

Organizations are recommended to focus on both types of innovations instead believing in one as these innovations (MI and TI) are the significant predictors of sustainability and financial performance. Hervas-Oliver Jose-Luis et al. (2017) attempt to advance knowledge on the topic of innovation management by exploring the interrelationship between technological innovation and management innovation. Connecting the technology-based and management-based innovation literature has helped develop a broader and more comprehensive framework for addressing innovation phenomena.

In doing so, their study examines the interdependence of technological and managerial innovations, as well as their joint integration and potential impact on the efficiency performance of firms. Based on the analysis of 12,563 Spanish firms in the CIS data, their findings suggest that firms often introduce technological and managerial innovations simultaneously or jointly and that integration positively affects firm performance.

H8: Innovation management influence Organizational performance.

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METHODOLOGY

The scope of the study was limited to Thailand's metal industry as the research population and conducted questionnaire surveys and analysis of members through the Siam Metal Association (http://www.siammetalasso.com/). The Siam Metals Association (Thai Metals Association) has been established until 70 years. The members of the association include distributors, manufacturers, importers and exporters of steel products and ferrous metals. There are currently more than 240 members. The metal industry is not only the foundation of Thailand's construction and real estate and other large and medium-sized industries, but also the automobile industry, machinery industry and electrical appliances.

At the same time, it promotes Thailand's economy and creates national employment and income. From the study of Cohen, J. (1988), there are many factors that affect the number of samples, including "significance", "statistical test power", and "effective size "and "statistical method". What is the number of samples analyzed by SEM? At present, most of the calculation of the statistical verification power and samples of the SEM model are based on the estimation method of RMSEA proposed by MacCallum et al. (1996).

Regardless of the number of samples calculated, if there are less than 200 samples, it should be performed with more than 200 samples as much as possible; if more than 200 samples should be sampled according to the calculated number of samples. While Schumacker and Lomax (2004) surveyed the literature and found that 250-500 samples were used in many articles, he also agreed that less than 100-150 samples are unstable. Therefore, if there are more than 10 variables in the study and the number of samples is less than 200, it is generally considered that the evaluation of parameters is unstable, and the significance test will lack statistical power.

In this study, K.M. Infrastructure, Organization Learning, K.M. Process Capability, Innovation Management have been conceptualized as a second-order construct and Organizational Performance be a first-order construct. The collected data were analyzed in the following procedure: the first is a data preparation process which can enhance the quality of data analysis. This includes data cleaning and data screening procedures such as mean, standard deviation (SD) and data normality to understand the current state of implementation of the Thai metal industry on these management variables. After that, the measurement models were tested using software analysis. Then, all the research hypotheses and research questions were tested and investigated. In this research, data analysis was implemented using two statistics analysis software packages.

RESULTS

Normal distribution of empirical variables Check out the distribution of the empirical variables studied in the structural equation model for all 22 variables using the chi-square test (χ^2). If it is found to be statistically significant at the .05 level, it indicates that the variable is abnormally distributed. On the other hand, if found to be statistically insignificant (P-value > .50), it means that such variables are normally distributed (Normal Distribution).

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Details are as follows:

Table 1: Mean (M), Standard Deviation (SD), Percentage of Dispersion Coefficient (%CV), Minimum Value (Min), Maximum Value (Max), Skewness Value (Sk), Value (Ku) and the P-value of the chi-square test (χ^2) of the empirical variables studied (n=440)

Variable	M	S.D.	%CV	Sk	Ku	χ^2	P-value
KMIOC	4.34	.57	13.31	-6.568	-3.143	53.015	.000
KMIOS	4.31	.65	15.18	-7.751	-.647	6.497	.000
KMIIT	4.25	.78	18.45	-7.901	-.808	63.079	.000
KMIPS	4.32	.56	13.06	-6.584	-3.320	54.372	.000
OLKT	4.14	.95	23.11	-7.663	-.293	58.810	.000
OLMC	4.27	.71	16.60	-7.220	-.972	53.067	.000
OLOE	4.10	.83	20.29	-5.404	-2.499	35.449	.000
OLST	4.19	.78	18.76	-6.679	-2.954	53.336	.000
OLOM	4.20	.77	18.32	-6.616	-2.937	52.393	.000
KMPAC	4.25	.72	16.93	-7.269	-1.621	55.473	.000
KMPOR	4.44	.47	10.74	-9.622	2.533	99.006	.000
KMPST	4.27	.56	13.11	-6.196	-3.223	48.775	.000
KMPAP	4.47	.45	10.08	-1.223	3.450	116.419	.000
KMPDI	4.43	.47	10.59	-9.286	1.922	89.933	.000
KMPCR	4.42	.55	12.54	-9.996	3.312	11.882	.000
IMMI	4.40	.53	12.24	-8.744	.964	77.392	.000
IMTI	4.41	.56	12.81	-9.366	2.365	93.313	.000
OPPI	3.42	.95	28.01	-3.189	-4.310	28.742	.000
OPIP	3.22	.84	26.25	-4.490	-3.570	32.910	.000
OPMS	3.20	.77	24.09	-3.599	-4.485	33.064	.000
OPPR	3.81	.92	24.28	-4.882	-4.062	4.328	.000
OPS	3.91	.88	22.56	-4.689	-3.160	31.968	.000

Note: Statistically significant chi-square (χ^2) values (P-value <.05) indicate an abnormal distribution.

Table 1 The results of checking the normal curve distribution (Normal Score) of the empirical variables studied in the structural equation model found that the variables tested with the chi-square statistic (χ^2) showed that all the empirical variables in the model tested and found that was statistically significant ($p < .05$), indicating that all such empirical variables the distribution is not a normal curve (Non Normal Distribution), which the result. This may result in an empirical assessment of whether the model is consistent. The chi-square (χ^2) test statistic was problematic, so that we solved the problem of the said statistic in assessing harmony by finding the ratio of chi-square (χ^2) to degrees of freedom (df). If it is less than 2.00, it indicates that the model is empirically consistent. Although the test statistic (χ^2) of the model is statistically significant (p-value < .05) (Kalaya Wanichbancha, 2013; Hair, et al., 2006).

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Analysis results of the modified structural equation model (Adjust Model)

The researcher modified the model based on the hypothesis in order to harmonize it with the empirical data. By allowing the variance of the standard error (θ) of 18 pairs of empirical variables to be correlated (df before adjustment = 201 and df after adjustment = 183) until found that the adjusted model is consistent with the empirical data. Which is determined from the harmonious index (fit Index) as follows:

χ^2= 354.23 df = 183 p-value = .00000 , χ^2 / df = 1.93, RMSEA = .047, RMR = .047, SRMR = .049, CFI = .98, GFI = .93, AGFI = .91, CN = 243.70

The results of the following review of harmonization found that χ^2= 354.23, df =183 p-value = .00000 still does not pass the criteria because it is not statistically significant (P-Value > .05) (Joreskog; & Sorbom, 1996), but however because the test statistic χ^2 is sensitive to sample size. The researcher therefore also considered the χ^2 / df value, which was found to be equal to 1.93, which was considered to pass the specified criteria because it was less than 2.00 (Tabachnick & Fidell, 2007). RMSEA = .047, which was considered to pass the specified criteria determined because it is less than .05 (MacCallum et al, 1996). RMR = .047 qualified because it is less than .05 (Diamantopoulos & Siguaw, 2000). SRMR = .049 qualified because it is less than .05. (Diamantopoulos and Siguaw, 2000), CFI = .98 passed because it was greater than .90 (Tabachnick & Fidell, 2007), GFI = .93 passed because it was greater than .90 (Tabachnick & Fidell, 2007), AGFI = . 91 passed because it was greater than .90 (Tabachnick & Fidell, 2007) and CN = 243.70 passed because it was greater than 200.00 (Joreskog; & Sorbom, 1996). So it can be concluded that the adjusted structural equation model (Adjust Model) is consistent with the empirical data and the parameter estimation in such a model is therefore acceptable. The analysis results are as follows.

Table 2: Results of comparison of calculated statistics with criteria to verify compliance with Model empirical data revised structural equations (Adjust Model)

Criteria list	Predetermined criteria	Model statistics	Judgement
Likelihood Ratio Chi-Square Statistic (χ^2)	P-value greater than or equal to .05 (Joreskog; & Sorbom. 1996)	χ^2= 354.23 df = 183 p-value = .00000	not pass
Relative χ^2 (χ^2/df)	less than or equal to 2.00 (Tabachnick & Fidell, 2007)	1.93	pass
Root Mean Squared Error of Approximation (RMSEA)	less than or equal to .05 (MacCallum et al, 1996)	.047	pass
Root Mean Squared Residuals (RMR)	less than or equal to .05 (Diamantopoulos & Siguaw, 2000)	.047	pass
Standardized Root Mean Squared Residual (SRMR)	less than or equal to .05 (Diamantopoulos and	.049	pass

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	Siguaw, 2000)		
Comparative Fit Index (CFI)	More than or equal to .90 (Fan et al, 1999)	.98	pass
Goodness of Fit Index (GFI)	More than or equal .90 (Tabachnick & Fidell, 2007)	.93	pass
Adjusted Goodness of Fit Index (AGFI)	More than or equal .90 (Tabachnick & Fidell, 2007)	.91	pass
Critical N (CN)	More than or equal 200 (Joreskog; & Sorbom, 1996)	243.70	pass

Table 2 shows that the coherence index of the revised structural equation model. There is harmony with empirical data. Which is determined from the fit Index as follows: χ^2= 354.23 df = 183 p-value = .00000 , χ^2/df = 1.93, RMSEA = .047, RMR = .047, SRMR = .049, CFI = .98, GFI = .93, AGFI = .91, CN = 243.70. So it can be concluded that the adjusted structural equation model (Adjust Model) is consistent with the empirical data. and the parameter estimation in such a model is therefore acceptable.

Table 3: Results of Parameter Estimation of Direct Effect Coefficient, Indirect Effect and Total Effect from corrective equation model (n=440)

Dependent Variable	R^2	Influence	initial variable			
			Organizational Learning (OL)	Knowledge Management Process Capability (KMP)	Innovation Management (IM)	Knowledge Management Infrastructure (KMI)
Organizational Learning (OL)	.79	DE	-	-	-	.89*(10.00)
		IE	-	-	-	-
		TE	-	-	-	.89*(10.00)
Knowledge Management Process Capability (KMP)	.79	DE	.44 *(4.63)	-	-	.47*(5.85)
		IE	-	-	-	.39*(4.63)
		TE	.44 *(4.63)	-	-	.86*(11.12)
Innovation Management (IM)	.97	DE		.42*(9.93)	-	.42*(4.47)
		IE	.58*(4.93)	-	-	.34*(10.59)
		TE	.58*(4.93)	.42*(9.93)	-	.76*(15.43)
Organizational Performance (OP)	.82	DE	.57*(6.17)	.65*(4.24)	.47*(4.32)	-
		IE	.34*(5.68)	.28*(4.32)	-	.69*(7.28)
		TE	.91*(6.57)	.93*(4.67)	.47*(4.32)	.69*(7.28)
χ^2= 354.23 df = 183 p-value = .00000 , χ^2 / df = 1.93, RMSEA = .047, RMR = .047, SRMR = .049, CFI = .98, GFI = .93, AGFI = .91, CN = 243.70						

* Statistically significant at the .05 level

Note: In parentheses are the t-test statistic values. If the value is not between -1.96 and 1.96, then it is statistically significant at the .05 level.

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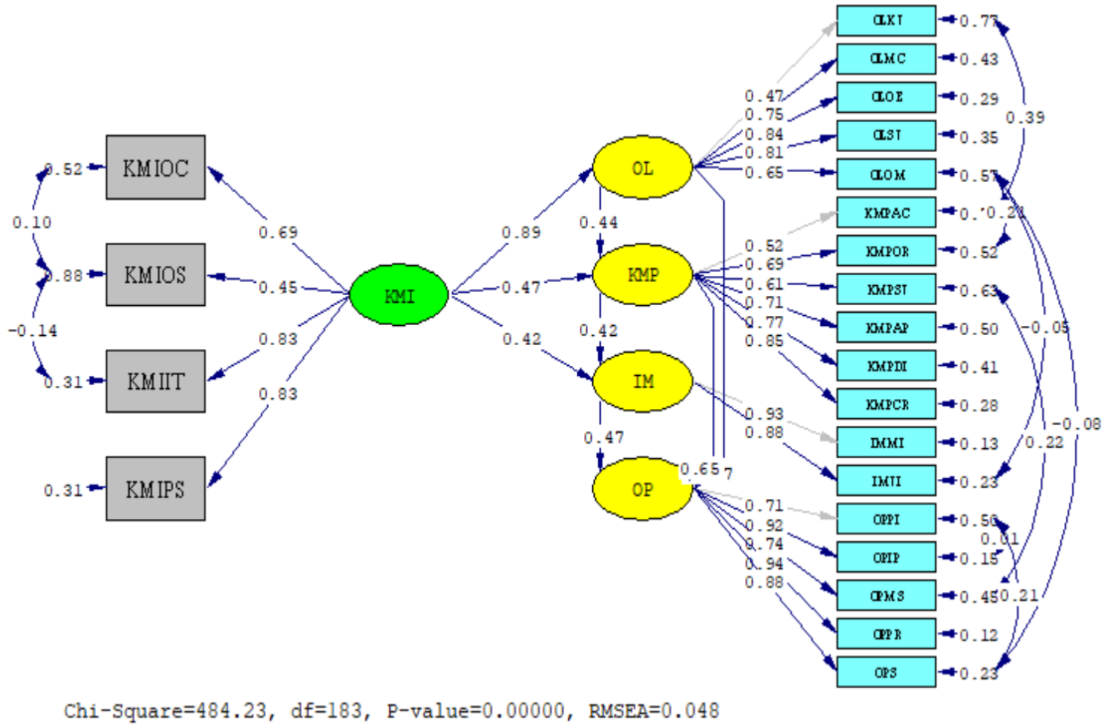

Figure 1: Modified model (n=440)

CONCLUSION

These research found that the correlation model of Organizational Learning (OL) Knowledge Management Process Capability (KMP) Innovation Management (IM) Knowledge Management Infrastructure (KMI) Effect to Organizational Performance (OP) performing adjustments (Adjust Model) is consistent with empirical data at acceptable levels. can Which is determined from the (fit Index) as follows: χ^2= 354.23 df = 183 p-value = .00000 , χ^2/df = 1.93, RMSEA = .047, RMR = .047, SRMR = .049, CFI = . 98, GFI = .93, AGFI = .91, CN = 243.70. The estimation was found in the structural equation model as follows:

1) Knowledge Management Infrastructure (KMI) has a direct influence on Organizational Learning (OL) at a coefficient of influence equal to .89 with a statistical significance at a level of .05 according to the research hypothesis No. 1 defined that Knowledge Management Infrastructure direct influence Organizational Learning
2) Knowledge Management Infrastructure (KMI) has a direct influence on Knowledge Management Process Capability (KMP) at the coefficient of influence equal to .47 with a statistical significance at the .05 level. Infrastructure direct influence Knowledge Management Process Capability

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3) Knowledge Management Infrastructure (KMI) has a direct influence on Knowledge Innovation Management (IM). The coefficient of influence is .42 with a statistical significance at the .05 level. This is in line with the research hypothesis 3, which is defined as Knowledge Management Infrastructure direct. influence Innovation Management
4) Organizational Learning (OL) has a direct influence on Knowledge Management Process Capability (KMP). The coefficient of influence is .44 with a statistical significance at the .05 level. Organizational Learning direct influence Knowledge Management Process Capability
5) Organizational Learning (OL) has a direct influence on Organizational Performance (OP), the coefficient of influence was .57 with a statistical significance at the .05 level according to the research hypothesis number 5, which stated that Organizational Learning direct influence Competitive Advantage
6) Knowledge Management Process Capability (KMP) has a direct influence on Innovation Management (IM). The coefficient of influence is .42 with statistical significance at the .05 level, according to research hypothesis No. 6, which is defined as Knowledge Management Process Capability. direct influence Innovation Management
7) Knowledge Management Process Capability (KMP) has a direct influence on Organizational Performance (OP), the coefficient of influence was .65 with a statistical significance of .05 according to research hypothesis number 7, which was defined as Knowledge Management Process Capability direct influence Competitive Advantage.
8) Innovation Management (IM) directly influences Organizational Performance (OP), the coefficient of influence was .47 with a statistical significance at the .05 level according to the research hypothesis number 8, defined as Innovation Management direct influence Competitive Advantage.
9) Organizational Learning (OL), Knowledge Management Process Capability (KMP) and Innovation Management (IM) can jointly predict Organizational Performance (OP) at 82%
10) Knowledge Management Process Capability (KMP) Knowledge Management Infrastructure (KMI) can jointly predict Innovation Management (IM) 97 percent
11) Organizational Learning (OL) Knowledge Management Infrastructure (KMI) can jointly predict Knowledge Management Process Capability (KMP) at 79%
12) Knowledge Management Infrastructure (KMI) can to predict Organizational Learning (OL) 79%

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